the combination of capitals, and the great saving in cost of production with new and labor-saving processes had any influence, is not to be inferred from this book. It would be a simple matter to multiply instances where the author has failed to grasp the importance of economic fact or tendency, and where he has exaggerated the effect of what was accidental and temporary. The general unsatisfactory manner of treatment becomes evident when Mr. Chapman's chapters are compared with Noyes's " Thirty Years of American Finance," a book that is a model of its kind. The opening chapter of Mr. Chapman's essay, treating of the " quantitative analysis of Anglo-American trade," is ineffective and misleading. We cannot accept his estimates of payment for freight, and the attempt to measure the other "silent" means of settling trade balances leads us to no conclusion. While the book may be useful to the beginner, it is too incomplete to instruct those who have used commercial statistics.

WORTHINGTON C. FORD.

## NATALITY.

*Sur les variations du taux de natalité et sur l'âge moyen des époux, suivant les conditions économiques.* By Enrico Raseri. *Bulletin de l'Institut International de Statistique.* Vol. xi; 149.

The author attempts, with considerable success, to show that the commonly accepted theories as to the decrease of fecundity among the European nations are based on an erroneous use of statistics. The ratio of births to the total population shows, indeed, a marked diminution during the past twenty-five years, as is indicated in the following table : —

BIRTHS PER 1000 INHABITANTS.

|  | 1870–74. | | 1890–94. | |
|---|---|---|---|---|
| England .. ......................... | | 35.3 | | 30.3 |
| Austria ............................ | | 39.4 | | 37.2 |
| Russia in Europe .................... | | 49.9 | | 48.5 |
| Switzerland......................... | | 30.1 | | 27.5 |
| France............................. | (1865–69) | 25.9 | | 22.4 |
| Prussia ............................ | (1865–69) | 37.6 | | 36.9 |
| Italy............................... | | 36.3 | (1891–95) | 36.3 |

*Natality.*

With a rapid increase in population, and a steady tide of emigration, the change in the age distribution of the population makes such a basis of calculation defective. If the number of births be referred to the number of females between the ages of 15 and 50, the result is changed as follows : —

| | Year. | Ratio of Births to 1,000 Females Between 15 and 50. |
|---|---|---|
| ITALY | 1863 | 149 |
| | 1871 | 145 |
| | 1881 | 146 |
| | 1891 | 149 |
| FRANCE | 1866 | 102 |
| | 1890 | 88 |
| ENGLAND | 1871 | 139 |
| | 1891 | 118 |
| PRUSSIA | 1867 | 138 |
| | 1890 | 148 |
| AUSTRIA | 1869 | 144 |
| | 1890 | 146 |
| SWITZERLAND | 1870 | 114 |
| | 1890 | 116 |

It appears from these figures that a decreased birth rate, with reference to women of marriageable age, has obtained in France and England only.

Raseri then proceeds to a calculation of the mean fecundity of marriages by dividing the number of legitimate births by the number of marriages. His results are again encouraging, except in the case France, as is shown by the following table : —

FECUNDITY OF MARRIAGES.

| | 1870–74. | 1890–94. |
|---|---|---|
| Italy | 4.5 | (1891–85.) 4.4 |
| France | (1865–69.) 3.0 | 2.1 |
| Prussia | (1865–69.) 4.0 | 4.2 |
| England | 3.9 | 3.8 |
| Austria | 3.7 | 4.1 |
| Russia in Europe | 4.9 | 5.5 |
| Switzerland | 3.9 | 4.3 |

Finally, the author turns his attention to the theory that the average age of marriage is delayed by modern social conditions. He takes the average age of married men as a basis for calculation ; and shows that it did not change appreciably, in the countries studied, between the early seventies and the early nineties. The concluding tables of average ages of married persons, and of average numbers of first marriages, in various occupations, are of less general interest. The author's final summary of this part of the paper is as follows : —

"The average age of married men has remained unchanged during the entire period of observation ; it varies, only, to some extent, with the occupation. This variation concerns the age of the husband more than that of the wife ; and it is not great enough to affect considerably the fecundity of the couples, even when the age of the husband is four or five years greater than the average for all occupations. In the various occupations the proportion of re-marriages bears no relation to the average age at the first marriage."

*La natalité selon le degré d'aisance.*   By Jacques Bertillon.   *Bulletin de l'Institut International de Statistique.*   Vol. xi ; 163.

Bertillon studies in this paper the relation of the birth rate to the prosperity of the citizens in the various districts and sub-divisions of London, Paris, Berlin, and Vienna. He classifies each district as either very poor, poor, comfortable, very comfortable, rich, or exceptionally rich, by applying certain arbitrary statistical standards. In Paris, for instance, five factors are used in this classification,— the proportion of female servants to households of two persons or more, the proportion of formal contracts to total marriages, the proportion of persons having any occupation who are registered as artisans, the proportion of persons living in over crowded tenements, and the proportion of the population receiving public aid. In the cases of Berlin and Vienna similar data are used relating to rents, population per room, over crowding, and numbers of domestics. For London a classification drawn up by Charles Booth in 1893 is used without alteration.

The figures for each district separately are given by Bertillon, and the districts of each group are then averaged. His final results may be grouped in the following table : —